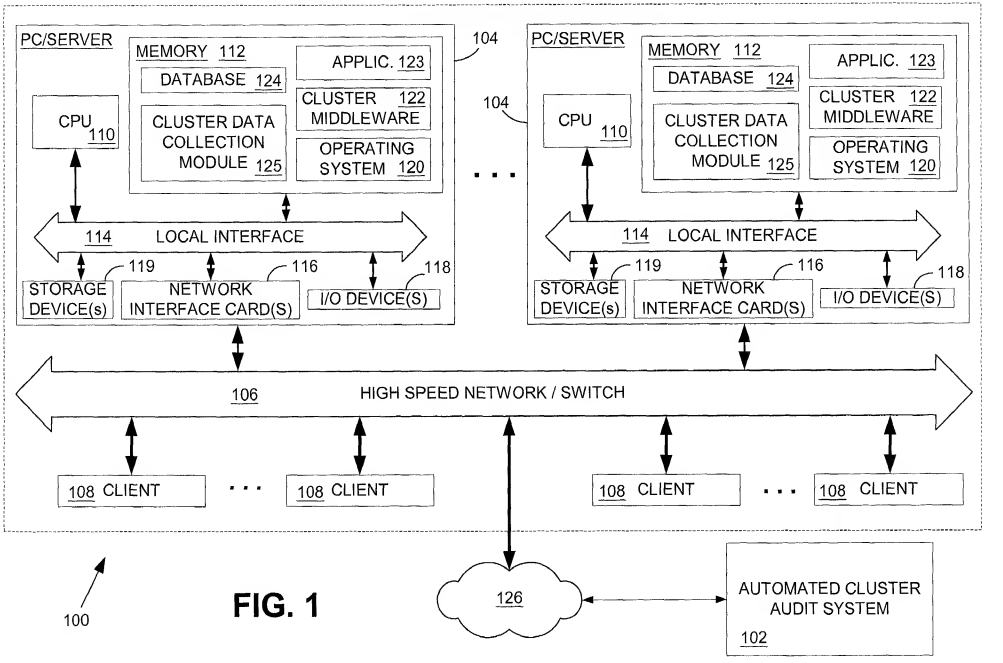
PC/SERVER
MEMORY 112
APPLIC. 123
DATABASE 124
CLUSTER 122 MIDDLEWARE
CPU 110
CLUSTER DATA COLLECTION MODULE 125
OPERATING SYSTEM 120
104
114 LOCAL INTERFACE
119
116
118
STORAGE DEVICE(s)
NETWORK INTERFACE CARD(S)
I/O DEVICE(S)
106 HIGH SPEED NETWORK / SWITCH
108 CLIENT
126
AUTOMATED CLUSTER AUDIT SYSTEM
102
100

FIG. 1

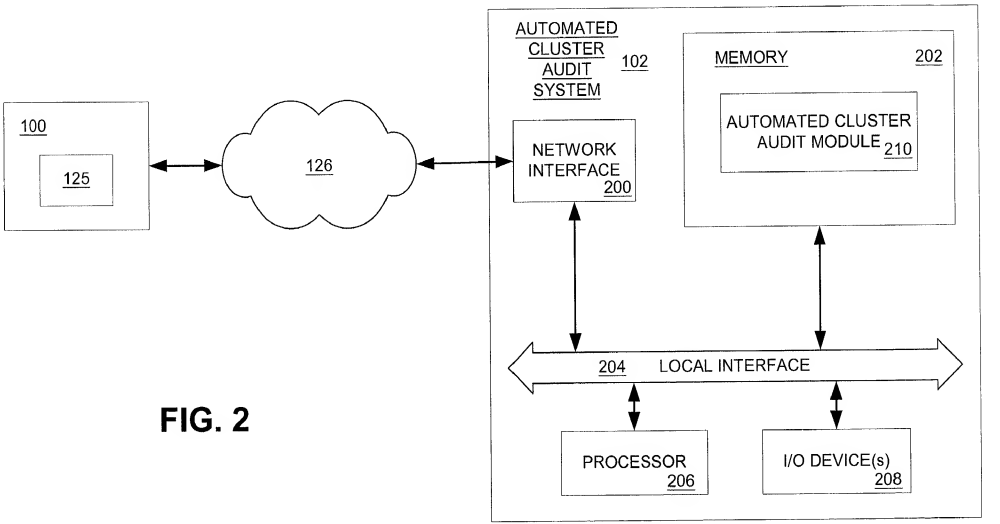
AUTOMATED CLUSTER AUDIT SYSTEM 102
MEMORY 202
AUTOMATED CLUSTER AUDIT MODULE 210
100
125
126
NETWORK INTERFACE 200
204 LOCAL INTERFACE
PROCESSOR 206
I/O DEVICE(s) 208

FIG. 2

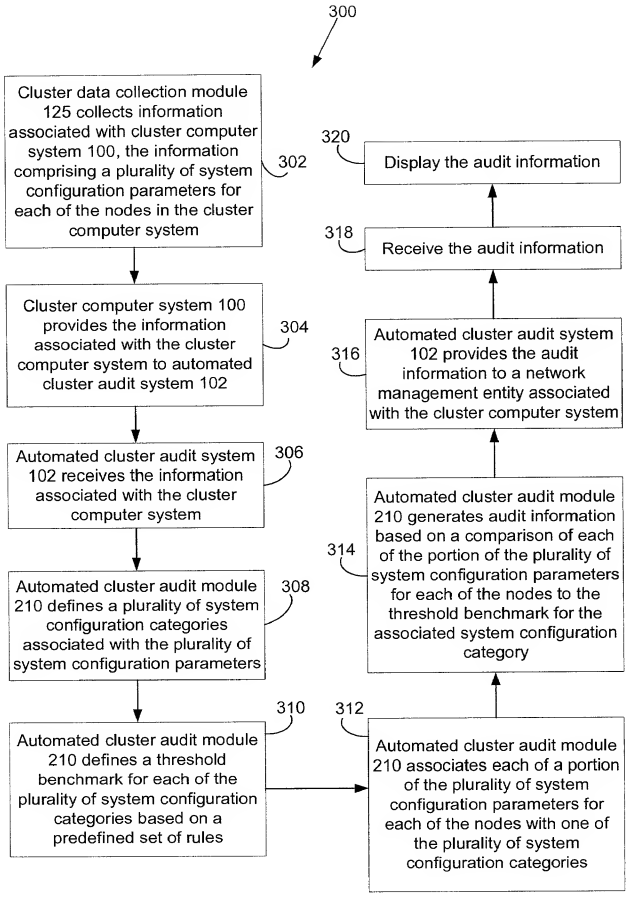
300
Cluster data collection module 125 collects information associated with cluster computer system 100, the information comprising a plurality of system configuration parameters for each of the nodes in the cluster computer system
302
Cluster computer system 100 provides the information associated with the cluster computer system to automated cluster audit system 102
304
Automated cluster audit system 102 receives the information associated with the cluster computer system
306
Automated cluster audit module 210 defines a plurality of system configuration categories associated with the plurality of system configuration parameters
308
Automated cluster audit module 210 defines a threshold benchmark for each of the plurality of system configuration categories based on a predefined set of rules
310
Automated cluster audit module 210 associates each of a portion of the plurality of system configuration parameters for each of the nodes with one of the plurality of system configuration categories
312
Automated cluster audit module 210 generates audit information based on a comparison of each of the portion of the plurality of system configuration parameters for each of the nodes to the threshold benchmark for the associated system configuration category
314
Automated cluster audit system 102 provides the audit information to a network management entity associated with the cluster computer system
316
Receive the audit information
318
Display the audit information
320

FIG. 3

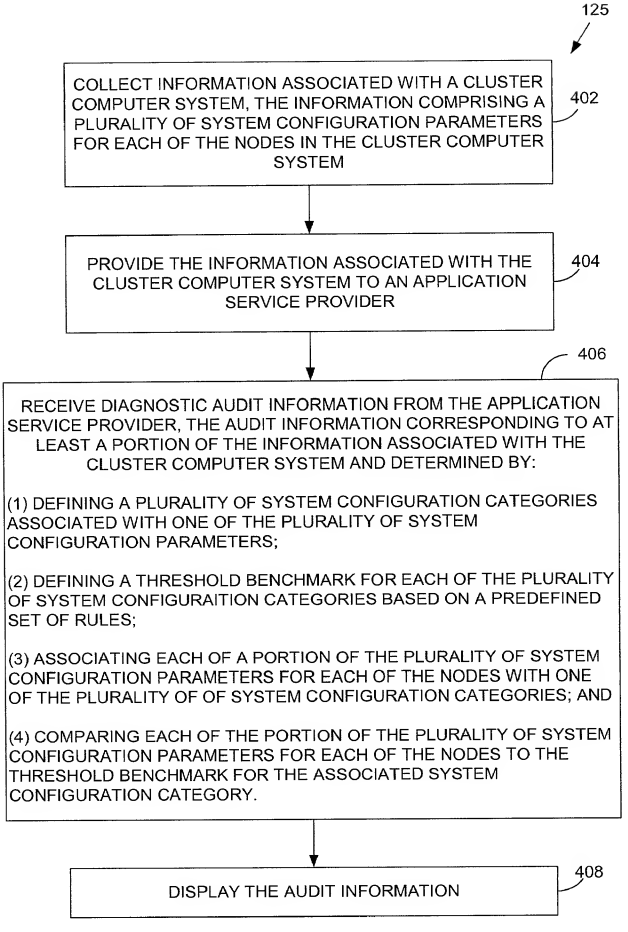
125
COLLECT INFORMATION ASSOCIATED WITH A CLUSTER COMPUTER SYSTEM, THE INFORMATION COMPRISING A PLURALITY OF SYSTEM CONFIGURATION PARAMETERS FOR EACH OF THE NODES IN THE CLUSTER COMPUTER SYSTEM
402
PROVIDE THE INFORMATION ASSOCIATED WITH THE CLUSTER COMPUTER SYSTEM TO AN APPLICATION SERVICE PROVIDER
404
406
RECEIVE DIAGNOSTIC AUDIT INFORMATION FROM THE APPLICATION SERVICE PROVIDER, THE AUDIT INFORMATION CORRESPONDING TO AT LEAST A PORTION OF THE INFORMATION ASSOCIATED WITH THE CLUSTER COMPUTER SYSTEM AND DETERMINED BY:
(1) DEFINING A PLURALITY OF SYSTEM CONFIGURATION CATEGORIES ASSOCIATED WITH ONE OF THE PLURALITY OF SYSTEM CONFIGURATION PARAMETERS;
(2) DEFINING A THRESHOLD BENCHMARK FOR EACH OF THE PLURALITY OF SYSTEM CONFIGURAITION CATEGORIES BASED ON A PREDEFINED SET OF RULES;
(3) ASSOCIATING EACH OF A PORTION OF THE PLURALITY OF SYSTEM CONFIGURATION PARAMETERS FOR EACH OF THE NODES WITH ONE OF THE PLURALITY OF OF SYSTEM CONFIGURATION CATEGORIES; AND
(4) COMPARING EACH OF THE PORTION OF THE PLURALITY OF SYSTEM CONFIGURATION PARAMETERS FOR EACH OF THE NODES TO THE THRESHOLD BENCHMARK FOR THE ASSOCIATED SYSTEM CONFIGURATION CATEGORY.
DISPLAY THE AUDIT INFORMATION
408

FIG. 4

500 →

NODE 502	CPU 504	RAM 506	Swap 508	Disk 510	Net Card 512	O/S Rev 514	Patch 516	Apps 518	Users 520	Cluster S/W 522
NODE 1	A	A	B	B	A	C	A	B	B	U
NODE 2	A	A	B	B	C	C	A	B	B	B
NODE 3	A	A	A	B	B	A	B	A	A	A
NODE 4	A	A	A	A	B	A	B	B	C	U
NODE 5	A	A	B	B	A	C	A	B	B	B
NODE 6	A	A	B	B	A	C	A	B	B	B

(A) Conforms, (B) Warning, (C) Issue; (U)nknown

FIG. 5

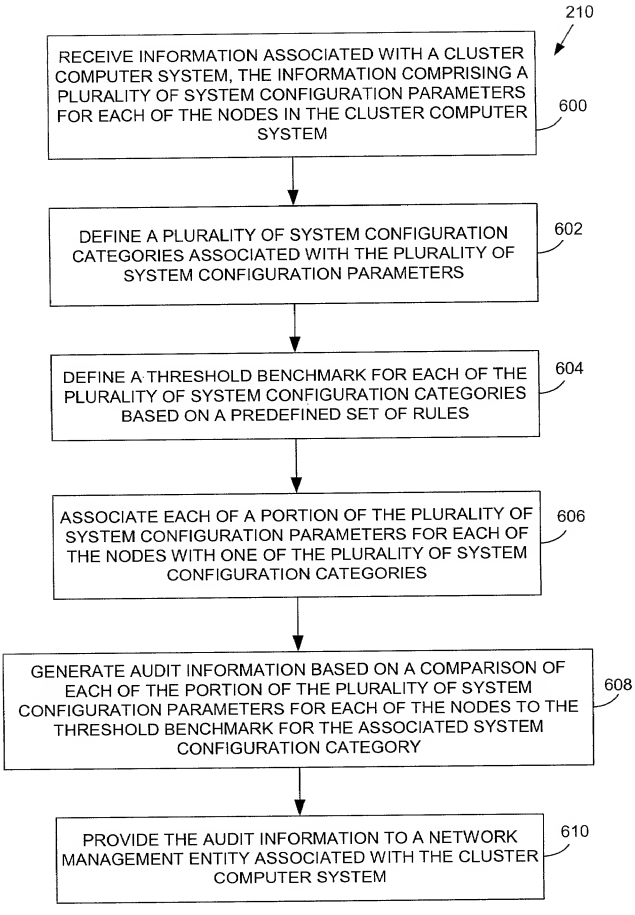
210
RECEIVE INFORMATION ASSOCIATED WITH A CLUSTER COMPUTER SYSTEM, THE INFORMATION COMPRISING A PLURALITY OF SYSTEM CONFIGURATION PARAMETERS FOR EACH OF THE NODES IN THE CLUSTER COMPUTER SYSTEM
600
DEFINE A PLURALITY OF SYSTEM CONFIGURATION CATEGORIES ASSOCIATED WITH THE PLURALITY OF SYSTEM CONFIGURATION PARAMETERS
602
DEFINE A THRESHOLD BENCHMARK FOR EACH OF THE PLURALITY OF SYSTEM CONFIGURATION CATEGORIES BASED ON A PREDEFINED SET OF RULES
604
ASSOCIATE EACH OF A PORTION OF THE PLURALITY OF SYSTEM CONFIGURATION PARAMETERS FOR EACH OF THE NODES WITH ONE OF THE PLURALITY OF SYSTEM CONFIGURATION CATEGORIES
606
GENERATE AUDIT INFORMATION BASED ON A COMPARISON OF EACH OF THE PORTION OF THE PLURALITY OF SYSTEM CONFIGURATION PARAMETERS FOR EACH OF THE NODES TO THE THRESHOLD BENCHMARK FOR THE ASSOCIATED SYSTEM CONFIGURATION CATEGORY
608
PROVIDE THE AUDIT INFORMATION TO A NETWORK MANAGEMENT ENTITY ASSOCIATED WITH THE CLUSTER COMPUTER SYSTEM
610

FIG. 6